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# AFDC/TANF Exits and Re-entries for Families Raising Children with Educational Disabilities

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## Abstract

Having a child with a disability is considered a barrier to self-sufficiency among welfare recipients. This study examines the impact of children's educational disability on single-mother families' welfare exits and re-entries for a cohort of children in a metropolitan region in Missouri, who were born between 1982 and 1994, and received AFDC/TANF at least once from 1990 through 2008 (*N*=4,928). A semiparametric proportional hazards model for recurrent events is used to analyze the relationship between a child's educational disability and family welfare exit and re-entry. Results show that families with children with disabilities (the disability group) are less likely to exit and more likely to re-enter the welfare system than families with children without disabilities (the nondisability group). After the 1996 welfare reform, the welfare exit rate increases more for the disability group than for the nondisability group, while the welfare re-entry rate decreases less for the disability group than for the nondisability group.

### Keywords

Children with disabilities; Poverty; Welfare reform; Single-parent families; Special education

## 1. Introduction

The passage of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) replaced Aid to Families with Dependent Children (AFDC) with Temporary Assistance for Needy Families (TANF), and ended the entitlement status of



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welfare. One goal of PRWORA was to reduce welfare dependency and promote economic self-sufficiency by increasing work participation. Previous research on the characteristics of "hard-to-employ" welfare recipients (e.g., Brandon & Hogan, 2004; Lukemeyer, Meyers, & Smeeding, 2000; Nam, 2005; Porterfield, 2002; Zedlewski, Holcomb, & Loprest, 2007) suggests that a mother's ability to work may be substantially affected by her child's disability or impairment. Children with disabilities may need extraordinary or time-intensive care (Knoll, 1992; LeRoy & Johnson, 2002; Porterfield, 2002), which not only limits the scope and type of jobs mothers can do, but also impairs mothers' employability. These children may also require more material resources and investment, and have greater needs for health care (Brandon, Hofferth, & Hogan, 2008). Families of children with disabilities may use welfare programs more intensively or stay longer on welfare compared to those of children without disabilities. However, existing studies have mixed findings on how child disability is related to family welfare experience (Acs & Loprest, 1999; Brandon & Hogan, 2004). In addition, previous research has not examined whether or not the welfare experience of children with disabilities and their families changed after welfare reform, although the overall welfare rolls in the US declined considerably when the 1996 PRWORA was implemented (Danielson & Klerman, 2008; Hofferth, Stanhope, & Harris, 2002).

To examine the association between child disability and family welfare experience, this study uses longitudinal administrative records (1990–2008) on nearly 5,000 children in a metropolitan region in Missouri. This study is unique in that the time period under scrutiny spans the pre- and post-welfare reform era, allowing researchers to see if child disability is associated with family welfare experience and whether this association (if any) changes after the 1996 welfare reform. Two research questions are examined: (1) What is the association between having a child with a disability and family welfare exit and re-entry? and (2) How does such child disability related welfare experience change after the 1996 welfare reform?

## 2. Background

An economic analysis of welfare use (Grogger & Karoly, 2005) suggests that, in the pre-welfare reform era, families of children with disabilities may have used welfare programs more intensively or stayed longer on welfare compared to those of children without disabilities. Caring for a child with a disability requires more time from parents, suggesting that less time is available for paid employment. As the only parent present in a single-mother family, mother's employment status is affected by child disability status. Mothers may also be less competitive in the labor market due to their lack of alternative qualified care for children with disabilities. For low income single-mother families, welfare participation may be preferred over maintaining a low-pay job for both the untaxed income and health needs of these families. Welfare recipients are categorically eligible for Medicaid while health insurance provided by a low-pay job, if any, is likely inadequate to meet the family's needs (Brandon & Hogan, 2004; Brandon, Hofferth, & Hogan, 2008).

The welfare use for families raising children with disabilities may be expected to decrease in the post-reform era because of policy changes under PRWORA (e.g., work requirements, sanctions, and time limits). The stringent work-related activity mandate and other policy changes increase the costs of welfare participation even for mothers of children with disabilities. These increased costs, combined with welfare stigma and burdensome administrative requirements, may outweigh the benefits of welfare participation. For instance, Parish, Rose, and Andrews (2010) found that employment rates increased for some low-income mothers raising children with disabilities after TANF implementations. The hypothesis of less welfare use among single-mother families raising children with disabilities should be examined carefully because these children and their families may face different policy options than families of children without disabilities. Many states, including

Missouri, have a time-limit exemption for families caring for a member with a disability. However, few families appear to take advantage of this option (Farrell et al., 2008). Only 6% of the welfare caseload in Missouri was exempted from the time limit as of 2002 (Dunton, 2003).

Empirical studies on the relationship between child disability and welfare exits/re-entries show inconsistent findings. Using the functional limitation measure of child disability in the 1990 panel of the Survey of Income and Program Participation (SIPP), Acs and Loprest (1999) found little evidence that having a child with a disability affects a family's probability of leaving AFDC in a sample of 760 welfare recipients in the early 1990s. The only significant result was that mothers of children with limitations on activities and schoolwork have a higher probability of exiting AFDC for reasons other than work. The researchers suggested that families of children with disabilities may have left welfare for the Supplemental Security Income (SSI) program.

Brandon and Hogan (2004), however, found that both child's and mother's disabilities significantly decreased the probability of leaving welfare (lower welfare exit rate) in a sample of nearly 900 unmarried mothers from the 1996 panel of the SIPP. A follow-up study (Brandon & Hogan, 2008) found that both child's and mother's disabilities are strong predictors of TANF re-entry and SSI entry. Similar to Acs and Loprest (1999), disability in these two studies was measured by indicators of restrictions in activities of daily living and limitations in performing age-appropriate social roles. A four-level categorical disability measure was created, including (1) both mother and child are disabled; (2) only mother is disabled; (3) only child is disabled; and (4) neither mother nor child are disabled. Whether focused on welfare exit or re-entry, the two studies by Brandon and his colleagues (2004, 2008) seemed to suggest that families of children with disabilities have more intensive use of welfare programs than those of children without disabilities, at least in the post-welfare reform era. None of these studies examines the trend in program participation of single-mother families of children with disabilities across welfare reform.

Given the inconsistencies in the existing literature, this study examines the relationship between child disability and single-mother family welfare exits and re-entries using a proportional hazards model. The study is different from the previous studies in the following ways. First, we use administrative records in one state, providing a complete history of welfare participation of each family over a period of nearly two decades (1990–2008) including dates of multiple welfare exits and re-entries (previous studies model only one exit or re-entry). An advantage of this administrative data is that it avoids sample reduction due to left-censored data in hazard models. Second, child disability in this study is measured by records of special education eligibility.

## 3. Methods

### 3.1 Data and Sample

This research uses administrative records in Missouri with an initial sample (N=5,082) comprised of single-mother families that had a child aged 11 or younger and were AFDC recipients during the sampling period (1993–1994) (Jonson-Reid et al., 2004). Administrative data for these families from July 1990 to August 2008 were drawn from multiple state agencies. Administrative data recorded respondents' welfare participation status (AFDC and TANF) during the observation period, including all entry and exit dates. All cases had at least one spell on welfare prior to 1995. The study sample is further limited to 4,928 children due to a small proportion of missing data and record errors (3%). Table 1 provides the descriptive statistics of the sample.

## 3.2 Measures

**3.2.1 Dependent Variables—**A welfare spell is defined as a period of welfare receipt (measured by months) by the single-mother family between the dates of program entry and exit; and, similarly, an off-welfare spell is a period of welfare nonparticipation between the dates of program exit and next entry. Following previous studies on welfare duration, one-month welfare or off-welfare spells are not counted because they are likely caused by administrative churnings and data entry errors (Acs & Loprest, 1999; Brandon & Hogan, 2004; Nam, 2005). Two dependent variables, exit from welfare and re-entry into welfare, were created based on the operational definitions of welfare and off-welfare spells. Welfare exit was used for welfare spell analysis, and welfare re-entry was used for off-welfare spell analysis. In the observation period, 10,230 welfare spells and 10,043 off-welfare spells were identified.

**3.2.2 Independent Variables—**The independent variable of primary interest is child disability defined by receipt of special education. Each child's special education status was recorded in the administrative data, and was used to create a dummy indicator of educational disability (yes/no). For simplicity, families caring for children with educational disabilities in the sample are referred to as the disability group, and families of children with disabilities are defined as the nondisability group.

**3.2.3 Control Variables—**Most control variables in the study were measured at the time of sampling (1993–1994) and, therefore, are time-invariant except for child's and mother's ages and the state unemployment rate. To follow the convention in research on family welfare use and welfare dynamics, the following control variables were chosen: (1) child's characteristics: age, gender, and race (black compared to non-black); (2) mother's characteristics: age, education level (high school graduation or not), unemployment status (unemployed or employed), and publicly funded mental health services (received services or not); and (3) 1990 household median income of the census tract where the family was living at the time of sampling. In addition, the state unemployment rate (obtained from the US Department of Labor) was used to control for change in economic conditions over time. We are not able to use county unemployment rate because the address of these families cannot be observed over time. Finally, the post-reform indicator was created to indicate whether the welfare/off-welfare spell starts before or after TANF policy implementation in Missouri on July 1, 1997, since the policy of time limits went into effect on July 1, 1997 in Missouri (Pandey, Porterfield, Choi-Ko, & Yoon, 2003). The models were also tested using December 1, 1996 as the cutoff line, and consistent results were found.

## 3.3 Analytic Strategy

The relationship between child disability and family welfare use is estimated using a semiparametric proportional hazards model (Cox regression). Previous studies used discrete hazard models because the exact dates of welfare exit and re-entry were unknown (Acs & Loprest, 1999; Brandon & Hogan, 2004). In this study, there is no concern about left-censored data because all entry and exit dates of welfare spells during the study period are observed. A variance-corrected method is utilized to adjust the correlation between repeated welfare/off-welfare spells of single-mother families (Box-Steffensmeier & Zorn, 2002; Cook & Lawless, 2002). Because families' repeated welfare/off-welfare spells follow a sequential order, a conditional risk set is defined in the study (Box-Steffensmeier & De Boef, 2006). That is, a family is not at risk for a subsequent spell until it has experienced all the previous spells. In addition, assuming the baseline hazards associated with different welfare/off-welfare spells vary, the conditional risk-set proportional model is stratified by the sequence of spells to create event-specific baseline hazards. For example, the hazard rate is likely to be different for the first welfare spell as compared to the third spell.

Three sets of analyses are conducted in this study. Model 1 estimates the impact of child disability on family welfare use across the observation period, conditional on all control variables. While the post-reform indicator is controlled for, Model 1 cannot estimate whether the association between child disability and family welfare experience changed after welfare reform. Therefore, Model 2 applies a difference-in-difference specification to include an interaction term of child disability and the post-reform indicator, with which we are able to examine the welfare use of the disability and nondisability groups prior to and after welfare reform. The regression coefficient of the interaction term provides an estimation of the change of the impact of child disability in the post-reform era.

The finding regarding the post-reform indicator and its interaction term with child disability in Model 2 should be interpreted carefully. Welfare reform involves very complicated policy changes with various components, and many factors can lead to welfare exit or entry (Hofferth, Stanhope, & Harris, 2002), such as maternal employment, marital status change, enhanced income, and entry into the Supplemental Security Income program (SSI). These cannot be fully captured by a dummy measure of the post-reform indicator.

Additionally, the post-reform variable is a time indicator, and may be confounded with child development over time. Model 3, therefore, examines the effect of child disability on welfare/off-welfare spells on two respective subsamples: families with children aged six and younger vs. those older than six. Because mothers may choose to stay home when their children are young, and reenter the work force after their children enter school (Porterfield, 2002), the interaction term in Model 3 for the full sample might reflect the effects of child development (e.g., some children with disabilities may need less care from mothers when they are older and go to school). Thus, the strategy of age separation in Model 3 may be useful to address the confounded relationship of child development with the post-reform indicator.

## 4. Results

### 4.1 Descriptive Statistic

Table 1 reports the demographic characteristics of the study sample. The prevalence of educational disability in this study was 23%, substantially higher than the national estimate (13%; Wagner, Cameto, & Guzman, 2003). This, however, is not entirely unexpected because of the poverty status of the sample (Lee, Sills, & Oh, 2002). It is known that children in poor or one-parent families have a higher incidence rate of disability (Hogan, Rogers, & Msall, 2000). The sample children were about 19 years old on average at the end of the observation period. About half of the children were female. The majority of the sample was categorized as Black (82%), which is reflective of the demographics of families receiving welfare in the study region. Mothers of these children were mostly in their early 20s when the child was born ($M$=24, $SD$=6). Less than 60% of mothers had a high school diploma at the time of sampling. Given that all these families were covered by the AFDC/TANF program at some point during the study period, it is not surprising that the mothers' unemployment rate was high (87%). Most of the study families lived in disadvantaged communities. The high school graduation rate ($M$=62%) and the household median income ($M$=$24,570 in 1990 dollars) in the census tract where the family was living at the time of sampling are lower than the national averages (75% and $30,056, respectively). The results reveal that the disability group differs from the nondisability group on most of the characteristics (child's and mother's).

Table 2 shows the characteristics of welfare and off-welfare spells in the sample. There are a total of 10,230 welfare spells and 10,043 off-welfare spells, respectively. Excluding right-censored spells, the average welfare spell is about 28 months across the entire observation

period, and the average off-welfare spell is about 22 months. Families raising children with disabilities have longer average welfare spells (32 months) and shorter off-welfare spells (20 months), highlighting their more disadvantaged socioeconomic status compared with those without disabilities. As expected, welfare duration dropped considerably (more than 50%) after welfare reform for both the disability and nondisability groups. However, off-welfare duration in post-reform, on average, is three months shorter than that in pre-reform. It is worth noting that the difference in welfare durations between the disability group and the nondisability group becomes smaller after welfare reform (6.3 months in pre-reform vs. 0.1 months in post-reform), which may indicate a greater decline of welfare use among families caring for children with disabilities.

### 4.2 Child Disability and Welfare Spells

Tables 3 and 4 list hazard ratios for the analyses. Model 1 (Table 3, Column 1) includes child disability and control variables in the analysis. It shows that, in general, families of children with disabilities are less likely to exit welfare compared to their counterparts. The relative risk of welfare exit, at any time, for the disability group is about 87% of that for the nondisability group, and this is statistically significant at the .01 level. In other words, the welfare exit rate is 13% lower for families with children with disabilities than those without children with disabilities, given that they have not exited from welfare program in previous stages. The post-reform indicator has a positive regression coefficient in Model 1, statistically significant at the .01 level. When all other variables are held constant, the rate of program exit after welfare reform is 77% higher than that before welfare reform.

The interaction term in Model 2 (Table 3, Column 2) is statistically significant and positive, suggesting that the group difference (disability vs. nondisability) in the welfare exit rate changes significantly after welfare reform. The hazard ratio of exit from welfare increases significantly more for the disability group than the nondisability group post welfare reform. Specifically, the rate of welfare exit for the former is lower than the latter by 16% before welfare reform and 3% after welfare reform (See Note 2 in Table 3). These estimations are consistent with the descriptive statistics reported in Table 2: the average duration of welfare spells reduces by 23 months for families with children with disabilities and by 15 months for those of children without disabilities in the post-welfare reform era.

Finally, Model 3 was tested on welfare spells for children in different age groups: those six years and under vs. those older than six (Table 3, Columns 3 and 4), in hopes that this separation can, to some extent, separate the effects of child development. The variables of child disability, the post-reform indicator, and their interaction term show a similar pattern in both tests, but with different magnitudes. The interaction term has a statistically positive association with the dependent variable for both age groups. Specifically, in the younger group, the disability group is 10% less likely to exit welfare than the nondisability group in pre-reform, but are 55% more likely to exit welfare after welfare reform (See Note 3 in Table 3). In the older group, the difference in the welfare exit rate between the disability and nondisability groups is 20% before welfare reform, and 2% after (See Note 4 in Table 3).

Among the other control variables, both mother's age when the child was born and mother's age at the beginning of the welfare spell are used to indicate mother's earning power. Since child's age equals the difference between the two variables of mother's age, we do not include child's age in the model. In addition, we have an indicator of whether the examined welfare spell occurs before or after child's special education assessment, assuming disability assessment outcomes may change family's welfare participation. All control variables have expected directions: (1) Black children, child disability status, mother's age when entering the spell, mother's unemployment status at the time of sampling, and the state unemployment rate are negatively related to the probability of welfare exit; and (2) mother's

age when the child was born, mother's education, and the neighborhood economic status are positively related to welfare exit.

### 4.3 Child Disability and Off-welfare Spells

Analyses of welfare re-entries yield results different from those of welfare exits reported in Table 3, mainly for the interaction term of child disability and the post-reform indicator.

As shown in Model 1 of Table 4, there is a positive association between child disability and welfare re-entries: the rate of welfare re-entry for the disability group is 46% higher than that of the nondisability group. According to Model 2, the interaction term of child disability and the post-reform indicator (Table 4, Column 2) is statistically significant at the .10 level. The welfare return rate for the disability group is 40% greater than the nondisability group prior to welfare reform. However, after welfare reform, the difference in the welfare return rate between the two groups increases to 62% (see Note 2 in Table 4), despite the fact that both groups have a significantly lower return rate. In other words, the welfare return rate decreases less for the disability group than the nondisability group. The interaction term is no longer statistically significant after the off-welfare spells are separated into two age groups (Table 4, Columns 3 and 4).

In summary, the above analyses of welfare and off-welfare spells show that child disability status is an important factor associated with family welfare use. Consistent with studies of Brandon and his colleagues (Brandon, Hofferth, & Hogan, 2008; Brandon & Hogan, 2004), child disability generally is associated with a lower rate of welfare exit and a higher rate of welfare return. After the 1996 welfare reform, the welfare exit rate increases faster for the disability group than for the nondisability group, while the welfare re-entry rate decreases less for the former than for the latter.

## 5. Discussion

Using longitudinal administrative data from a Midwestern state, this study explores the impact of child educational disability on family welfare exits and re-entries. The study finds that families caring for children with disabilities stay on welfare longer and are more likely to need assistance again after welfare exits. The study also finds that the difference in welfare exit/welfare re-entry between the two groups (disability vs. nondisability) has changed since welfare reform was enacted. After welfare reform, there is only a 3% difference (a decrease of 13 percentage points) in the welfare exit rate between children with and without disabilities (Table 3, results from Model 2). One possibility is that these children have been transferred to the SSI program (not measured in this data set); families of children with disabilities may look for more stable income solutions after welfare reform.

One alternative explanation is that child care subsidy policies targeting low-income families have expanded remarkably since the 1996 welfare reform (Blau & Tekin, 2003; Robins, 2007), providing stronger support for increased work effort among mothers of children with disabilities. For instance, in 1998, low-income parents in Missouri received child care subsidies ranging from $5 to $25.75 a day for each child, with higher amounts going to those with lower incomes. During the two and half years after welfare reform, the number of registered vendors in the child care subsidy program grew by 600% (Bower, 1999). However, the disability group has a welfare re-entry rate 62% higher than the nondisability group (Table 4, results from Model 2). While the increased welfare exit rate suggests that all families, with and without children with disabilities, have lower program utilization after welfare reform, the increased difference in re-entry rates between the two groups suggests that families of children with disabilities may be more vulnerable to unstable employment and other barriers to staying off welfare.

When the sample children are separated into two subsamples by age for the analysis of welfare spells, the results for the older group is consistent with that of the full sample. However, the larger magnitude of the interaction term for the younger group (Column 3 of Table 3) shows that younger children with disabilities have a much larger increase in the welfare exit rate after welfare reform. This somehow conflicts with our prediction of the relationship between child development and welfare use. It was hypothesized that younger children with disabilities experience less increase in the welfare exit rate due to their greater needs for care compared to their older counterparts. It is not clear why younger children with disabilities actually have a drastic decline in welfare use after welfare reform in this sample. It is possible that the estimation of the younger group is less reliable due to a smaller sample size (only 32 children in the younger group having welfare spells after welfare reform). More child care support for working families after welfare reform, such as child care subsidy, could be another explanation. These subsidies could have greater effects for younger children. It is also relatively easier to find child care for younger children. There are fewer public subsidies and fewer support services for older children with disabilities (greater than 12 years). For example, no after-school support and few summer camp programs are available once kids are 13 and older. Nevertheless, this needs to be further evaluated in the future.

### 5.1 Limitations

With a focus on the welfare use of families caring for children with disabilities, the nature of this study is exploratory, and the results should be interpreted with caution. First, AFDC/TANF is managed by both the federal and the state governments, and state policy regarding this program varies greatly. As a result, findings from one state may not reflect families' welfare experiences in other states. Second, while the post-reform era is considered, the study cannot and does not intend to evaluate the effects of welfare reform on the welfare use of children with disabilities and their families. There are a number of policy changes in the 1996 PRWORA with differing and even contradicting policy goals (Grogger and Karoly, 2005). The post-reform indicator is used to show the time trend in welfare use by families caring for children with disabilities and can by no means be interpreted as the effect of welfare reform or any of its components.

We also did not examine the reasons for welfare exit and re-entry because of the lack of data. Welfare exit may be a result of gained or increased employment and earnings, changes in living arrangement, sanctions, and/or SSI entry. Without this information, it is not clear whether welfare exit actually indicates economic self-sufficiency. In addition, the time dimension, as indicated by the post-reform variable, may confound with a number of factors (e.g., child development or macro economic performance). Although our analysis shows that child development cannot provide a satisfactory explanation of family welfare experience, a cohort study would be a better design to minimize the confounding effects. Finally, due to the nature of administrative data, the covariates included in the above analysis are relatively limited (e.g., lack of information on maternal impairment and employment status over time). This may result in model misspecification and estimation biases, and does not allow further exploration of the mechanism regarding the welfare use trend of children with disabilities.

Future research is needed to examine the impact of child disability on family welfare experience. More importantly, specific policy options, such as work requirements, sanctions, and time limits, as well as alternatives to welfare, such as SSI or marriage, should be included in the analysis. The effect of each of these policy options on the welfare participation decision of families should be evaluated since families of children with disabilities may face some policy options different from those for other families. Answers to these questions would provide a basis for stronger policy support of families caring for children with disabilities.

### 5.2 Policy Implications

Since child disability is a barrier to achieving economic self-sufficiency for welfare families, more support should be provided for families of children with disabilities. One policy option may be to provide sufficient child care for these families. Despite the increase of child care subsidies after welfare reform, nearly one-third of low-income families were denied child care due to child disability (Cutler & Gilkerson, 2002). Child care support is available for low-income mothers for only a short period, with the average subsidy lasting only three to seven months (Meyers et al. 2002). Given these children's special needs, inclusive and high-quality child care programs are needed to enable the caregiver to work. Also, child care subsidies for these families should be made available for a longer period after they leave welfare so that parents are able to maintain employment and achieve economic self-sufficiency.

In addition, it may make sense for child care subsidy programs, which typically require parents to pay for 30% of child care costs (Waldfogel, 2006), to cover a higher proportion of costs for children with disabilities. For example, states may set a higher reimbursement rate for the care of children with disabilities, or take into account the factor of child disability when calculating parent copayment. Tax credits can be provided to subsidize child care for mothers of children with disabilities (Burman, Maag, & Rohaly, 2005). Furthermore, these programs should also give parents of children with disabilities more flexibility in choosing child care arrangements, such as informal child care, child care centers, and other approaches because their access to quality care is often limited.

Second, work polices should allow working mothers of children with disabilities to have more time to care for their children. The continuing needs of children with disabilities for health services may require parents to have intermittent absences from their work. Unfortunately, nearly half of all workers and three-fourths of those in the bottom fifth of income do not have paid sick leave (Boots, Macomber, & Danziger, 2008). The Family and Medical Leave Act (FMLA) is a helpful provision for mothers of children with disabilities (Parish & Cloud, 2006) because it allows parents to take unpaid, job-protected leave to care for an ill or disabled family member. In addition, mothers of children with disabilities should be allowed to have a flexible work schedule. These polices may together create a better work-family balance for these mothers, and may produce positive effects in reducing welfare dependency.

Third, time limit exemptions for families raising children with disabilities should be appropriately implemented. Exempting these families from the time limit is a policy adopted by 26 states, including Missouri, as of 2007 (Farrell et al., 2008). But as reported in Dunton (2003), the number of welfare recipients receiving the time limit exemption in Missouri is very small, possibly due to the rules which are unclear and not uniformly applied even within the same state (Farrell et al., 2008).

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## Highlights

- We examine the association between child disability and family welfare use.
- Welfare exit rate increases more for children with disabilities after TANF.
- Welfare re-entry rate decreases less for children with disabilities after TANF.

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**Table 1**

Sample Characteristics (N=4,928)

| | Full Sample | | Disability Group | | Nondisability Group | |
|---|---|---|---|---|---|---|
| | **Freq/Mean** | **%/SD** | **Freq/Mean** | **%/SD** | **Freq/Mean** | **%/SD** |
| *Children's Characteristics* | | | | | | |
| Educational disability (yes) | 1159 | 23.36 | | | | |
| Age at Aug 2008 ** | 19.30 | 3.36 | 19.06 | 3.23 | 19.37 | 3.39 |
| Gender (female) *** | 2456 | 49.51 | 477 | 41.16 | 1979 | 52.05 |
| Race (black) *** | 4065 | 81.94 | 910 | 78.52 | 3155 | 82.98 |
| *Mother's Characteristics* | | | | | | |
| Age when the child was born * | 23.51 | 5.89 | 23.86 | 6.26 | 23.41 | 5.77 |
| Education (high school graduation) *** | 2876 | 58.53 | 604 | 52.57 | 2272 | 60.35 |
| Unemployment status (unemployed) *** | 4249 | 87.21 | 933 | 82.57 | 3316 | 88.62 |
| Mental health services (yes) ** | 153 | 3.08 | 52 | 4.49 | 101 | 2.66 |
| *Census Tract* | | | | | | |
| High school graduation rate | 61.86 | 12.97 | 61.49 | 12.98 | 61.97 | 12.97 |
| Household median income | 24570 | 10844 | 24246 | 10905 | 24668 | 10826 |

Significance level of the comparison between children with and without disabilities : * p<.05, **p<.01, ***p<.001.

**Table 2**

Welfare and Off-welfare Spells

| | Welfare Spells | | | Off-welfare Spells | | |
|---|---|---|---|---|---|---|
| | **Full Sample** | **Disability Group** | **Nondisability Group** | **Full Sample** | **Disability Group** | **Nondisability Group** |
| Total number of spells | 10,230 | 2,607 | 7,623 | 10,043 | 2,532 | 7,511 |
| Average duration * (month) | 28.41 | 31.59 | 27.32 | 21.82 | 20.27 | 22.39 |
| Average duration in pre-reform * | 32.68 | 37.45 | 31.11 | 22.94 | 20.86 | 23.66 |
| Average duration in post-reform * | 14.59 | 14.72 | 14.55 | 19.66 | 19.25 | 19.83 |

* The calculation of average duration excludes right censored cases, which may cause estimation bias. Nonetheless, the results reported in this table are consistent with those in Tables 3 and 4 which use hazard models to appropriately address the right censoring issue.

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## Table 3

Child's Educational Disability and Welfare Exits

| Variables | Model 1 | Model 2 | Model 3 for age <=6 | Model 3 for age>6 |
|---|---|---|---|---|
| *Major Independent Variables* | | | | |
| Child with a disability | 0.87*** | 0.84*** | 0.90** | 0.80*** |
| Post-reform indicator | 1.77*** | 1.70*** | 1.72*** | 1.42*** |
| Disability*Post-reform indicator | | 1.16*** | 1.72*** | 1.22*** |
| *Child's Characteristics* | | | | |
| Race (black) | 0.92*** | 0.92*** | 0.93* | 0.88*** |
| Gender (female) | 0.99 | 0.99 | 0.99 | 0.99 |
| Post-disability assessment | 0.88*** | 0.90*** | 1.08 | 0.91** |
| *Mother's Characteristics* | | | | |
| Age at birth | 1.20*** | 1.20*** | 1.60*** | 1.13*** |
| Age at spell | 0.83*** | 0.83*** | 0.63*** | 0.88*** |
| Unemployment status (unemployed) | 0.93** | 0.93** | 0.93 | 0.97 |
| High school graduation (yes) | 1.16*** | 1.16*** | 1.02 | 1.04*** |
| Mother uses mental health services | 0.98 | 0.98 | 0.82* | 1.02 |
| *Macroeconomic Indicators* | | | | |
| Census Tract Median household income | 1.11*** | 1.11*** | 1.12*** | 1.13*** |
| State unemployment rate | 0.95*** | 0.95*** | 0.84*** | 0.93*** |

[1]Hazard ratios reported in Table. * p<.1, **p<.05, ***p<.01.

[2]According to Model 2, the rate of welfare exit of the disability group is 3% lower than that of the nondisability group after welfare reform {3%=1-exp[log(.84)+log(1.16)]}.

[3]According to Model 3 for children of six years old and younger, the welfare exit rate of the disability group is 50% higher than that of the nondisability group after welfare reform {−50%=exp[1-log(.90)+log(1.72)]}.

[4]According to Model 3 for children of seven years and older, the welfare exit rate of the disability group is 2% lower than that of the nondisability group after welfare reform {2%=1-exp[log(.80)+log(1.22)]}.

## Table 4

Child's Educational Disability and Welfare Re-entries

| Variables | Model 1 | Model 2 | Model 3 for age <=6 | Model 3 for age>6 |
|---|---|---|---|---|
| *Major Independent Variables* | | | | |
| Child with a disability | 1.46*** | 1.40*** | 1.12 | 1.43*** |
| Post-reform indicator | 0.23*** | 0.22*** | 0.66*** | 0.25*** |
| Disability*Post-reform indicator | | 1.15* | 1.00 | 1.04 |
| *Child's Characteristics* | | | | |
| Race (black) | 1.20*** | 1.20*** | 1.05 | 1.17*** |
| Gender (female) | 0.93** | 0.93** | 0.94 | 0.93* |
| Post-disability assessment | 2.80*** | 2.85*** | 1.73*** | 2.08*** |
| *Mother's Characteristics* | | | | |
| Age at birth | 0.82*** | 0.82*** | 0.61*** | 0.78*** |
| Age at spell | 1.21*** | 1.21*** | 1.62*** | 1.26*** |
| Unemployment status (unemployed) | 0.81*** | 0.81*** | 0.88** | 0.85*** |
| High school graduation (yes) | 0.96 | 0.96 | 0.93 | 0.97 |
| Mother uses mental health services | 1.04 | 1.04 | 1.04 | 1.00 |
| *Macroeconomic Indicators* | | | | |
| Census tract's household median income | 1.01 | 1.01 | 0.98 | 1.03 |
| State unemployment rate | 0.97 | 0.97 | 1.21*** | 0.73*** |

[1] Hazard ratios reported in Table. *p<.1,** p<.05, ***p<.01.

[2] According to Model 2, the welfare return rate of the disability group is 62% higher than that of the nondisability group after welfare reform {62%=1-exp[log(1.40)+log(1.15)]}.